

Work Order ID 75632

October-27-11 11:37:29 AM

75632

Page 1

Item ID: D6004-115 Accept

Revision ID:

Item Name: Crosstube Material

Start Date: 27/10/2011 Start Qty: 20.00 ***20***

Required Date: 29/03/2013 Req'd Qty: 20.00 ***20***

Reference:

N900040100 Setup Start ***NS1***

Stop ***NS2***

Cust Item ID:

Customer:

Approvals: Process Plan: M.L.J Date: 11/10/12 Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D6004	Rev A

100 PURCHASING 0.00

100

Purchasing

Purchasing

Memo

0.00

Issue P/O 15346 a) Extrude as per Dwg D6004b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9or QQ-A-200/11) seamless aluminum tube)Minimum ultimate tensile strength = 77 ksid)Minimum tensile yield strength=66 ksie)Material certification

CL 11/11/03 20

110 Receive & Inspect for Damage & Mat'l Certs 0.00

110

Packaging

Packaging

Memo

0.00

Ensure material certification is attached

13/01/13 (24)

120 QC6- Inspect dimensions to drawing 0.00

120

QC

Quality Control

Memo

0.00

Ensure Material certification comply to Dwg D6004

DAS
16
9-89 13/1/22

24

X see attached Mat. sheets &

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

75632

Page 2

N900040100

Setup Start *NS1*

Stop *NS2*

20

Cust Item ID:

20

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Insp.
Stamp

0,00


130

HandFinish

Hand Finishing

Memo

0.00

N/A 
8/31/23

Identify as per dwg & Stock Location: **LG**

0.00

140

Packaging

Packaging

Memo

0.00

1 ϕ mmc
13/01/22
13/1/25 ϕ

QC21- Final Inspection - Work Order Release

0.00

150

OC

Quality Control

Memo

0.00

Q13-01-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-27-11 11:37:33 AM

Page 1

Work Order ID: 75632

75632

Parent Item: D6004-115

D6004-115

Parent Item Name: Crosstube Material

Start Date: 27/10/2011

Required Date: 29/03/2013

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:B 00.12.15 Added: Issue P/O EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6004-115P		Purchased	No			110	Each	0.0000	1	20			
D6004-115P									**				
Crosstube material													

43/01/3 (24)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



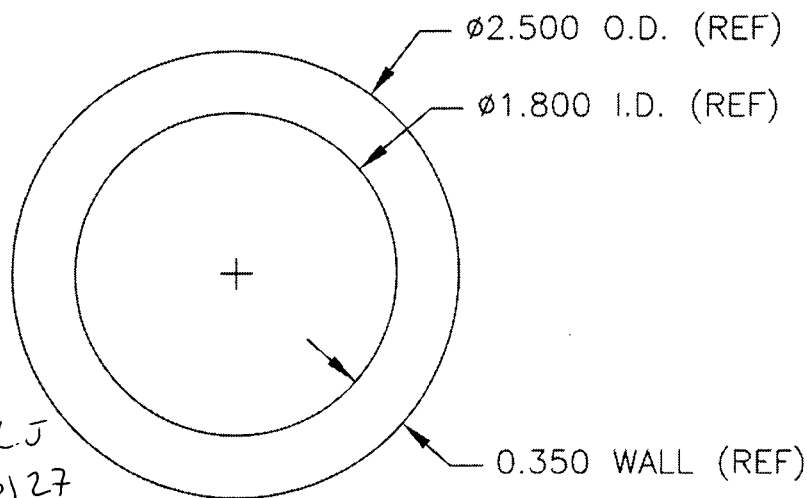
DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6004	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *A*

XERO COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

75632 M.L.J
11/10/27



NOTES

- 1) D6004-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 115" LONG TUBE: D6004-115

- 2) MATERIAL: 2.500 OD x 0.350 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
WALL: ± 0.015 MEAN (± 0.035 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.125/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

Copyright © 2000 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Packinglist ALUnna AG

ALUnna ref. no.	44989/100
Customer PO.	PO. 15346
Date:	11.30.12

Boxmarking:

Dart Aerospace Po. 15346
D6004 - 115
Made in Germany Dest.: Hawkesbury Ont, Canada

We hereby declare that the wooden packing material are totally free from bark and apparently

free from live plant pests

We hereby declare that the wooden packing material are totally free from bark and apparently										Boxdimension			Cast. / Heat No. Top		Pcs.	Cast. / Heat No. Middle		Pcs.	Cast. / Heat No. Bottom	
Item no.	Box no.	OD (inch)	ID (inch)	Wall (inch)	Net Weight (lbs)	Tare lbs	Gross Weight	Pieces	lengths (ft)	Lengths (inch)	Width (inch)	height (inch)								
100	1	2,500	1,800	0,350	668	272	940	24	10	151,575	22,441	22,441	8344/1401446		10				8345/1401446	
																			</	

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde: Dart Aerospace Ltd.
Client: 1270 Aberdeen Street
 K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 1608/12
 Cert No.: / No. du certificat:
Bestellnummer: PO 15346
 Order No. / No. de commande
Auftrag: 44989/200
 Our Reference/Notre Reference:

Produkt: Rohre nahtlos gepresst
 Product / Produit: Tubes seamless extruded
Spezifikation: AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6006
 Specification:

Werkstoff: 7075
 Alloy/Alliage:

Zustand: T 6511
 Temper/État

Abmessung: 3,250 INCH x 2,220 INCH x 0,515 INCH x 129,000 INCH
 Size / Dimension: D6006-129 3.250 X 0.515 X 129

Kennzeichnung: CERT. NO. 1608/12 - ALUnna - 7075 - T6511 - CAST NO. 8345 - AMS - QQ - A - 200/11 - 3.250" OD X 0.515" WALL - HEAT LOT NO.
 Marking/Marquage: 1401446 - ALUnna Order CONF. NO. 44989/200-1 - P.O. 15346
 Stück kg **Country of Manufacture: Germany**

Lieferung: 24 629,00 Products are in accordance with applicable RoHS
 Delivered Material / Matériel délivre: Other elements each max. 0,05 %, total 90,15

1. Chemische Analyse

Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
8345/12	0,086	0,179	1,484	0,057	2,557	0,209	5,945	0,040	0,003	0,0341	0,0001	0,0015	0,0001

Hydrogen content: 0,09 ccm/100 g Al Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	77,0	66,0	7,0			
max.						
1	88,015	81,345	11,0			1401446
2	86,855	79,460	10,0			

RMS: outside 25 - max. 22,0 µ"

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order
Resultats: Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

22.11.2012 / Tasc



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003
 valid until 2013-11-10

ALUnna - 001059 OM - 001059 ASH



ALUnna
 Abnahmebeauftragter

Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

Kunde:
Client:

Dart Aerospace Ltd.
1270 Aberdeen Street
K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 1591/12
Cert No. / No. du certificat:

Bestellnummer: PO 15346
Order No. / No. de commande

Auftrag: 44989/100
Our Reference/Notre Reference:

Produkt:

Product / Produit:

Spezifikation:

Specification:

Werkstoff:

Alloy/Alliage:

Abmessung

Size / Dimension

Kennzeichnung

Marking/Marquage:

Rohre nahtlos gepresst
Tubes seamless extruded
AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6004

Zustand:
Temper/Etat

T 6511

7075

2,500 INCH x 1,800 INCH x 0,350 INCH x 115,000 INCH
D6004-115 2.500 X 0.350 X 115

ALUnna - CERT.NO. 1591/12 - 7075 - T6511 - CAST NO. ... - AMS - QQ - A - 200/11 - 2.500" OD X 0.350" WALL - HEAT LOT NO.
1401446 - ALUNNA ORDER CONF.NO. 44989/100-1 - P.O. 15346

Lieferung

Delivered Material / Matériel délivré:

pcs. 24
lbs 668
Chemical Analysis / analyse chimique

Country of Manufacture: Germany

Products are in accordance with applicable RoHS

Other elements
each max. 0,05%, total %0,15

1. Chemische Analyse

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
8344/12		0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
		0,092	0,190	1,489	0,051	2,120	0,205	5,710	0,040	0,003	0,0250	0,0001	0,0015	0,0001

Hydrogen content: 0,09 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

8345/12		0,086	0,179	1,484	0,057	2,557	0,209	5,945	0,040	0,003	0,0341	0,0001	0,0015	0,0001
---------	--	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------

Hydrogen content: 0,09 **ccm/100 g Al** Elements without indication < 0,01 % **country of melt manufacturer: Germany**

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat/Cast/Pcs.
min. max.	77,0	66,0	7,0			
1	80,330	73,225	8,0			1401446/ 8344/ 10
2	87,290	80,040	7,0			1401446/ 8345/ 14

8/13/12

RMS: outside 25 - max. 16,1 µ"

**Ergebnis der
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Resultats:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

MEAN OUTSIDE DIAMETER PERMISSIBLE ± 0.006 side A

Tube #	Actual A	Actual B	Mean	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.499	2.501	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
2	2.501	2.503	2.502	2.500	0.006	2.494	2.506	0.008	-0.004
3	2.499	2.500	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
4	2.497	2.503	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
5	2.499	2.504	2.502	2.500	0.006	2.494	2.506	0.007	-0.004
6	2.499	2.503	2.501	2.500	0.006	2.494	2.506	0.007	-0.005
7	2.500	2.501	2.501	2.500	0.006	2.494	2.506	0.006	-0.006
8	2.502	2.504	2.503	2.500	0.006	2.494	2.506	0.009	-0.003
9	2.497	2.501	2.499	2.500	0.006	2.494	2.506	0.005	-0.007
10	2.497	2.503	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
11	2.500	2.505	2.503	2.500	0.006	2.494	2.506	0.008	-0.003
12	2.501	2.500	2.501	2.500	0.006	2.494	2.506	0.006	-0.006
13			#DIV/0!		0.006	-0.006	0.006	#DIV/0!	#DIV/0!
14			#DIV/0!		0.006	-0.006	0.006	#DIV/0!	#DIV/0!
15			#DIV/0!		0.006	-0.006	0.006	#DIV/0!	#DIV/0!
16			#DIV/0!		0.006	-0.006	0.006	#DIV/0!	#DIV/0!

MEAN OUTSIDE DIAMETER PERMISSIBLE ± 0.006 Side B

Tube #	Actual A	Actual B	Mean	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.501	2.503	2.502	2.500	0.006	2.494	2.506	0.008	-0.004
2	2.501	2.501	2.501	2.500	0.006	2.494	2.506	0.007	-0.005
3	2.499	2.503	2.501	2.500	0.006	2.494	2.506	0.007	-0.005
4	2.505	2.498	2.502	2.500	0.006	2.494	2.506	0.007	-0.004
5	2.500	2.501	2.501	2.500	0.006	2.494	2.506	0.006	-0.006
6	2.501	2.505	2.503	2.500	0.006	2.494	2.506	0.009	-0.003
7	2.500	2.498	2.499	2.500	0.006	2.494	2.506	0.005	-0.007
8	2.499	2.501	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
9	2.497	2.503	2.500	2.500	0.006	2.494	2.506	0.006	-0.006
10	2.501	2.503	2.502	2.500	0.006	2.494	2.506	0.008	-0.004
11	2.501	2.503	2.502	2.500	0.006	2.494	2.506	0.008	-0.004
12	2.503	2.507	2.505	2.500	0.006	2.494	2.506	0.011	-0.001
13			#DIV/0!	2.500	0.006	2.494	2.506	#DIV/0!	#DIV/0!
14			#DIV/0!	2.500	0.006	2.494	2.506	#DIV/0!	#DIV/0!
15			#DIV/0!	2.500	0.006	2.494	2.506	#DIV/0!	#DIV/0!
16			#DIV/0!	2.500	0.006	2.494	2.506	#DIV/0!	#DIV/0!

OUTSIDE DIA. Permissible (with Ovality) ± 0.012 side A

Tube #	Actual A	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
2	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
3	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
4	2.497	2.500	0.012	2.488	2.512	0.009	-0.015
5	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
6	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
7	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
8	2.502	2.500	0.012	2.488	2.512	0.014	-0.010
9	2.497	2.500	0.012	2.488	2.512	0.009	-0.015
10	2.497	2.500	0.012	2.488	2.512	0.009	-0.015
11	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
12	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
13		2.500	0.012	2.488	2.512	-2.488	-2.512
14		2.500	0.012	2.488	2.512	-2.488	-2.512
15		2.500	0.012	2.488	2.512	-2.488	-2.512
16		2.500	0.012	2.488	2.512	-2.488	-2.512

OUTSIDE DIA. Permissible (with Ovality) ± 0.012 side b

Tube #	Actual A	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
2	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
3	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
4	2.505	2.500	0.012	2.488	2.512	0.017	-0.007
5	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
6	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
7	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
8	2.499	2.500	0.012	2.488	2.512	0.011	-0.013
9	2.497	2.500	0.012	2.488	2.512	0.009	-0.015
10	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
11	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
12	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
13		2.500	0.012	2.488	2.512	-2.488	-2.512
14		2.500	0.012	2.488	2.512	-2.488	-2.512
15		2.500	0.012	2.488	2.512	-2.488	-2.512
16		2.500	0.012	2.488	2.512	-2.488	-2.512

OUTSIDE DIA. Permissible (with Ovality) ± 0.012 side A

Tube #	Actual B	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
2	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
3	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
4	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
5	2.504	2.500	0.012	2.488	2.512	0.016	-0.008
6	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
7	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
8	2.504	2.500	0.012	2.488	2.512	0.016	-0.008
9	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
10	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
11	2.505	2.500	0.012	2.488	2.512	0.017	-0.007
12	2.500	2.500	0.012	2.488	2.512	0.012	-0.012
13		2.500	0.012	2.488	2.512	-2.488	-2.512
14		2.500	0.012	2.488	2.512	-2.488	-2.512
15		2.500	0.012	2.488	2.512	-2.488	-2.512
16		2.500	0.012	2.488	2.512	-2.488	-2.512

OUTSIDE DIA. Permissible (with Ovality) ± 0.012 side b

Tube #	Actual B	Nominal	Tolerance	min allowable dimension	max allowable dimension	Results for min allowable	Results for max allowable
1	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
2	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
3	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
4	2.498	2.500	0.012	2.488	2.512	0.010	-0.014
5	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
6	2.505	2.500	0.012	2.488	2.512	0.017	-0.007
7	2.498	2.500	0.012	2.488	2.512	0.010	-0.014
8	2.501	2.500	0.012	2.488	2.512	0.013	-0.011
9	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
10	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
11	2.503	2.500	0.012	2.488	2.512	0.015	-0.009
12	2.507	2.500	0.012	2.488	2.512	0.019	-0.005
13		2.500	0.012	2.488	2.512	-2.488	-2.512
14		2.500	0.012	2.488	2.512	-2.488	-2.512
15		2.500	0.012	2.488	2.512	-2.488	-2.512
16		2.500	0.012	2.488	2.512	-2.488	-2.512

end measurement with vern

Mean OUTSIDE DIA. Permissible +- 0.015									
Tube	Actual A	Actual B	Mean	Nominal	Tolerance	min	max	min	max
1	0.349	0.368	0.359	0.350	0.015	0.335	0.365	0.0235	-0.007
2	0.348	0.358	0.353	0.350	0.015	0.335	0.365	0.018	-0.012
3	0.345	0.357	0.351	0.350	0.015	0.335	0.365	0.016	-0.014
4	0.341	0.360	0.351	0.350	0.015	0.335	0.365	0.0155	-0.015
5	0.346	0.353	0.350	0.350	0.015	0.335	0.365	0.0145	-0.016
6	0.353	0.355	0.354	0.350	0.015	0.335	0.365	0.019	-0.011
7	0.344	0.362	0.353	0.350	0.015	0.335	0.365	0.018	-0.012
8	0.340	0.365	0.353	0.350	0.015	0.335	0.365	0.0175	-0.013
9	0.345	0.363	0.354	0.350	0.015	0.335	0.365	0.019	-0.011
10	0.347	0.360	0.354	0.350	0.015	0.335	0.365	0.0185	-0.012
11	0.351	0.356	0.354	0.350	0.015	0.335	0.365	0.0185	-0.012
12	0.349	0.357	0.353	0.350	0.015	0.335	0.365	0.018	-0.012
13	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365
14	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365
15	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365

OUTSIDE DIA. Permissible +- 0.038								
Tube	Actual A	Actual B	Nominal	Tolerance	min	max	min	max
1	0.349	0.368	0.350	0.038	0.312	0.388	0.037	-0.020
2	0.348	0.358	0.350	0.038	0.312	0.388	0.036	-0.030
3	0.345	0.357	0.350	0.038	0.312	0.388	0.033	-0.031
4	0.341	0.360	0.350	0.038	0.312	0.388	0.029	-0.028
5	0.346	0.353	0.350	0.038	0.312	0.388	0.034	-0.035
6	0.353	0.355	0.350	0.038	0.312	0.388	0.041	-0.033
7	0.344	0.362	0.350	0.038	0.312	0.388	0.032	-0.026
8	0.340	0.365	0.350	0.038	0.312	0.388	0.028	-0.023
9	0.345	0.363	0.350	0.038	0.312	0.388	0.033	-0.025
10	0.347	0.360	0.350	0.038	0.312	0.388	0.035	-0.028
11	0.351	0.356	0.350	0.038	0.312	0.388	0.039	-0.032
12	0.349	0.357	0.350	0.038	0.312	0.388	0.037	-0.031
13	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388
14	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388
15	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388

center measurment with ultra sonic

Mean OUTSIDE DIA. Permissible +- 0.015									
Tube	highest	lowest	Mean	Nominal	Tolerance	min	max	min	max
1	0.359	0.352	0.356	0.350	0.015	0.335	0.365	0.0205	-0.010
2	0.362	0.345	0.354	0.350	0.015	0.335	0.365	0.0185	-0.012
3	0.364	0.346	0.355	0.350	0.015	0.335	0.365	0.02	-0.010
4	0.360	0.345	0.353	0.350	0.015	0.335	0.365	0.0175	-0.013
5	0.355	0.347	0.351	0.350	0.015	0.335	0.365	0.016	-0.014
6	0.358	0.342	0.350	0.350	0.015	0.335	0.365	0.015	-0.015
7	0.352	0.349	0.351	0.350	0.015	0.335	0.365	0.0155	-0.015
8	0.352	0.349	0.351	0.350	0.015	0.335	0.365	0.0155	-0.015
9	0.362	0.343	0.353	0.350	0.015	0.335	0.365	0.0175	-0.013
10	0.365	0.341	0.353	0.350	0.015	0.335	0.365	0.018	-0.012
11	0.358	0.347	0.353	0.350	0.015	0.335	0.365	0.0175	-0.013
12	0.356	0.350	0.353	0.350	0.015	0.335	0.365	0.018	-0.012
13	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365
14	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365
15	0.000	0.000	0.000	0.350	0.015	0.335	0.365	-0.335	-0.365

OUTSIDE DIA. Permissible +- 0.038								
Tube	highest	lowest	Nominal	Tolerance	min	max	min	max
1	0.359	0.352	0.350	0.038	0.312	0.388	0.047	-0.036
2	0.362	0.345	0.350	0.038	0.312	0.388	0.050	-0.043
3	0.364	0.346	0.350	0.038	0.312	0.388	0.052	-0.042
4	0.360	0.345	0.350	0.038	0.312	0.388	0.048	-0.043
5	0.355	0.347	0.350	0.038	0.312	0.388	0.043	-0.041
6	0.358	0.342	0.350	0.038	0.312	0.388	0.046	-0.046
7	0.352	0.349	0.350	0.038	0.312	0.388	0.040	-0.039
8	0.352	0.349	0.350	0.038	0.312	0.388	0.040	-0.039
9	0.362	0.343	0.350	0.038	0.312	0.388	0.050	-0.045
10	0.365	0.341	0.350	0.038	0.312	0.388	0.053	-0.047
11	0.358	0.347	0.350	0.038	0.312	0.388	0.046	-0.041
12	0.356	0.350	0.350	0.038	0.312	0.388	0.044	-0.038
13	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388
14	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388
15	0.000	0.000	0.350	0.038	0.312	0.388	-0.312	-0.388

EXTRUSION INSPECTION SHEET

		SIDE A		SIDE B		ULTRA SONIC MEASURMENTS							
TUBE #	TOTAL LENGTH	DIA two readings		DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12" in middle	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	129.00"	3.250"			2.220"	0.515"	0.010"	N/A	Middle	N/A			
1	129.00"	3.241"/3.250"	3.243"/3.248"		2.215"	0.509"/0.516"	0.004"	N/A	Middle	0.517"	0.513"	0.510"	0.511"
2	129.00"	3.247"/3.250"	3.253"/3.254"		2.214"	0.509"/0.518"	0.0045"	N/A	Middle	0.521"	0.500"	0.518"	0.526"
3	129.00"	3.243"/3.248"	3.243"/3.248"		2.215"	0.512"/0.514"	0.0105"	N/A	Middle	0.508"	0.514"	0.519"	0.517"
4	129.00"	3.245"/3.248"	3.245"/3.249"		2.216"	0.513"/0.516"	0.005"	N/A	Middle	0.514"	0.511"	0.514"	0.516"
5	129.00"	3.239"/3.247"	3.245"/3.251"		2.216"	0.510"/0.531"	0.0045"	N/A	Middle	0.509"	0.513"	0.521"	0.518"
6	129.00"	3.247"/3.251"	3.249"/3.253"		2.220"	0.505"/0.527"	0.003"	N/A	Middle	0.514"	0.519"	0.515"	0.511"
7	129.00"	3.243"/3.249"	3.247"/3.249"		2.218"	0.506"/0.513"	0.0055"	N/A	Middle	0.519"	0.513"	0.506"	0.514"
8	129.00"	3.243"/3.249"	3.244"/3.247"		2.214"	0.507"/0.523"	0.006"	N/A	Middle	0.513"	0.508"	0.512"	0.518"
9	129.00"	3.239"/3.241"	3.245"/3.246"		2.209"	0.510"/0.529"	0.0055"	N/A	Middle	0.509"	0.508"	0.518"	0.517"
10	129.00"	3.243"/3.247"	3.247"/3.249"		2.213"	0.506"/0.523"	0.004"	N/A	Middle	0.509"	0.522"	0.516"	0.508"
11	129.00"	3.243"/3.247"	3.246"/3.251"		2.216"	0.511"/0.522"	0.010"	N/A	Middle	0.518"	0.511"	0.507"	0.518"
12	129.00"	3.244"/3.248"	3.246"/3.249"		2.217"	0.507"/0.521"	0.0075"	N/A	Middle	0.514"	0.519"	0.512"	0.511"
13								N/A	Middle				
14								N/A	Middle				
15								N/A	Middle				
PART # D6006-129		P/O# 15346				BATCH # 75633			Notes:				

